UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

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eScholar, LLC,
Plaintiff   **04 Civ. 4051 (SCR)**

        v.   **MEMORANDUM DECISION**
                                                          AND ORDER
Otis Educational Systems, Inc.,
Defendant

Defendant Otis Educational Systems, Inc., brings this motion for summary judgment alleging 1)

that plaintiff eScholar's application to the copyright office was invalid; 2) the works eScholar

seeks to enforce are not copyrightable; and 3) there is no evidence of copying. For the following

reasons, this court denies all Defendant's motions for summary judgment.

I.   Background

        a. Facts

        On May 29, 2004, eScholar, LLC ("eScholar" or "Plaintiff") brought an action against

Otis Educational Systems, Inc. ("Otis" or "Defendant") for common law breach of contract and

copyright infringement pursuant to the Copyright Act of 1976, 17 U.S.C. §§ 101 *et seq*.

eScholar claims that Otis's data models infringe eScholar's data models, and that the purported

infringement constitutes a breach of the Reseller Agreement.

        eScholar is the owner of a computer program known as the "eScholar Complete Data

Warehouse," of which a critical component is the "eScholar Data Model." The warehouse holds

education-related information concerning students in grades kindergarten through twelve and

allows a school district to compare the performance of students in multiple school districts. The

Warehouse is useful in part because it facilitates the reporting of information to government

regulators as required by law including, for example, federal No Child Left Behind legislation and similar state laws. eScholar designated its original and unique compilation of K-12 data as copyrighted, and has registered its original data warehouse design and six derivatives thereof with the U.S. Copyright Office, as further explained below.

Otis offers services and develops products in the same business sector as eScholar. Otis constructs data models for warehouses and has produced what it refers to as ten "core data models."

In March 2000, eScholar gave Otis personnel access to the eScholar Complete Data Warehouse to permitted Otis to examine and analyze the model to determine if it was compatible with Otis's operating software. Otis executed a non-disclosure agreement. In April 2001, eScholar provided the eScholar entire computer program including the original published eScholar Data Model and all unpublished and published works to permit Otis to assess whether the program will meet the needs of Otis's clients.

In July 2001, eScholar received a copy of a data model that Otis created for another corporation. eScholar believed this data model was significantly similar to its own. Otis prepared a memorandum purporting to distinguish the two models, and the two parties apparently reconciled.

On or about October 21, 2001, eScholar and Otis signed a "Reseller Agreement" in which Otis agreed to license and resell eScholar's software. Pursuant to the Reseller Agreement, eScholar provided Otis with complete access to eScholar's data warehouse model. Further, Otis promised not to "compile, reverse engineer, disassemble, copy or in any way duplicate the Licensed Materials, in whole or in part, except as expressly authorized by this Agreement or by prior written consent of eScholar." (Reseller Agreement § 2.9.2.)

On or about April 8, 2004, one of Otis's customers sent eScholar a copy of a data model that Otis had offered to the customer in January 2002 as a component of Otis's own K-12 computer software package. eScholar contends that this software infringes its copyright and violates the Reseller Agreement, and brought suit on May 28, 2004.

The United States Copyright Office granted eScholar a copyright over several versions of the software it alleges Otis infringed. Using Form TX, eScholar registered its "Complete Data Warehouse data models" with the Copyright Office on May 12, 2004. The application included a deposit of photocopies of what was described as the "eScholar Complete Data Warehouse Data Models" for each version. A data model is the "pictorial representation of the data structure in a given environment." (Otis Ed. Sys., Inc.'s Rule 56.1 Statement Uncontested Facts¶ 3, Aug. 3, 2005, eScholar LLC's Resp. Otis' [sic] Statement Pursuant Local Rule 56.1 ¶ 3, Sept. 9, 2005.) The eScholar data model provides "a pictorial representation of the relationship between tables and columns in a K-12 database." (Otis Ed. Sys., Inc.'s Rule 56.1 Statement Uncontested Facts ¶ 3, Aug. 3, 2005; eScholar LLC's Resp. Otis' [sic] Statement Pursuant Local Rule 56.1 ¶ 3, Sept. 9, 2005.)

Each of the copyright forms was then amended on May 20, 2004. With permission from eScholar, the Copyright Office revised the description of the "nature of material" from "computer program data model," which was how eScholar characterized it, to just "computer program." (eScholar's Completed Forms TX, § 2(a); Boehme Dep. 25:5-25, Nov. 4, 2004.)

Otis's expert acknowledged that the copyright examiner who registered eScholar's copyrights "would have had to have been convinced that there was sufficient source code or object code to qualify as a computer program." (Oman Dep. at 100.)

b. Technical Background/eScholar's Copyright Infringement Claims

To assess the copyrightability of the program and whether a valid copyright has been infringed here, we must first describe how data warehousing works, and describe eScholar's and Otis's programs a bit further. Our information about the underlying technology and the two programs comes primarily from eScholar's papers and uncontested facts in Otis's Rule 56.1 statement, as we must find any disputed facts in the nonmovant's favor at the summary judgment stage.

A data warehouse is a specialized computer system for management reporting and analysis of data for a particular industry. Here, eScholar and Otis both wrote computer programs for the "K-12" industry—that is, they wrote programs for clients who were affiliated with school grades kindergarten through twelve. The programs themselves are influenced by external factors like dimensional modeling techniques,[1] state and federal regulations, and state or school district organizational requirements. For instance, the K-12 industry is subjected to a variety of data disclosure requirements, like those contained in the "No Child Left Behind" Act, so the programs must contain "assessment" data—information about the various tests that measure students' performances, like the SAT.

The data model is a way of representing the arrangement and organization of data in a data warehouse. The data model dictates how the data is structured, organized, and arranged, and should facilitate the user's ability to understand, retrieve, and report the data. These models consist of "tables," which relate to the subjects, and "columns," which are the facts within each table.[2] Rows of data are inserted into the tables. These tables are related to each other via common columns called "keys," which are explained in more detail below. These keys often have the same column name and may, but need not, have the same meaning in related tables.

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[1] Dimensional data modeling is a method of compiling large amounts of data and organizing that data into a database so users can run reports.

[2] Some people in the data modeling industry refer to tables as entities and columns as attributes.

Data is put into the data warehouse through a process called "extract, transform, and load," or "ETL." ETL programs usually extract data from other databases or computer files, transform the data into a format the data warehouse can read, and then load the data into the data warehouse tables.

A data model designer creates a data model specifically for a certain type of business, and the designing process may be lengthy. The designer needs detailed knowledge of the business area to create a model that addresses the needs of the industry. Often, the designer creates subsequent, improved versions of the data model. Here, for example, eScholar registered six different versions of its program.

Programmers use Data Definition Language, or DDL, to define tables and other database structures in DBMSs. Shawn Bay, who was the found of eScholar and primary author of the original eScholar Complete Data Warehouse, stated that DDL was the specific way of telling the underlying database engine how to create the physical structures that the database engine uses internally. While DDL is created in different ways, Bay said that it was typically written in SQL. Bay stated that he did not typically think of SQL as source or object code.

To create programs using DDL, programmers may choose to use "authoring tools," which make it easy to create and modify data models, and provide graphical representations of the data models.[3] Here, eScholar used "PowerDesigner" and Otis used "ERwin" to write the DDL for their respective programs.

Data model tables may be "fact" or "dimension" tables. Fact tables contain raw data, like student information, and the dimension tables help categorize the information. Here, the information in dimension tables might specify the school district or students' ethnic background.

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[3] In their respective Rule 56.1 statements, eScholar states that these authoring programs generate the DDL from the data model. Otis states that the programs create either or both the data model and the DDL.

Data in some dimension tables may change slowly over time. For instance, the data for a student—like "grade level"—may change from year to year as the student passes into the next grade. eScholar refers to these data as "slowly changing dimensions."

The factual items stored in tables are called "fields" or "columns." These fields contain descriptive information, and many are also searchable. Thus, a program might permit the user to search a "grade level" field by telling the computer to "select all students with grade level equal to four."

"Keys" are fields that help identify and correlate data. Keys can be used to identify certain rows in a table. Sometimes, rows may be uniquely identified by a combination of fields. Thus, a row might be identified by "student ID," or by a combination of "student ID" and "test ID." Keys can also be used to correlate, combine, or join together the data in different tables. Thus, if two tables contained a "student ID" key, they could be joined together. Here, one of the disputed issues is the "District_Key," a key that eScholar used in its program that permits, e.g., the gathering of data for compliance with regulations contained in the "No Child Left Behind" Act.

Data models thus reflect the tables and specifications in the database, and provide a basis for physically implementing data warehouse. Data models are implemented on databases through the ETL process explained above. Organizations use databases to store their records electronically. "Database management systems" ("DBMSs") organize and control these databases.[4] Databases can vary in size and complexity; DBMSs can run on a variety of different kinds of computers, from mainframes to personal computers.

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[4] DBMSs include IBM's "DB2," Oracle Corporation's "Oracle," Microsoft's "SQL Server," "Sybase" and "Infomix." A computer program written for one DBMS could be "ported" into another DBMS without changing its functionality.

eScholar's data warehouse program is called the "eScholar Complete Data Warehouse Solution." It contains a data model. Otis's data warehouse program is called AssessMart, and it also contains a data model.

eScholar has isolated the "literal" components of its program that it believes are protectable and have been infringed by Otis's AssessMart program: (1) the invention of a multipart or composite key in each table, labeled a "district key" (or, as written in the program, "District_Key") that permits the storage of multiple districts' information on one database; (2) a method of recording "slowly changing dimensions" by including "school year" in a table called "student," which provides a structure of organizing student data when it is combined with other fields; (3) the aggregation of assessment data into a single data structure that contains four levels of classifications for student assessments. (eScholar's Mem. Law Opp. Otis' [sic] Mot. Summ. J. 3, 13-17; Otis Ed. Sys., Inc.'s Rule 56.1 Statement of Uncontested Facts, Aug. 3, 2005, ¶ 12; eScholar LLC's Resp. Otis' [sic] Statement Pursuant Local Rule 56.1, Sept. 9, 2005, ¶ 12.) eScholar additionally alleges that Otis copied "non-literal" components of its program: the overall selection, coordination, and arrangement of data in eScholar's data models. *See* eScholar's Mem. Law Opp. Otis' [sic] Mot. Summ. J. 17; Otis Ed. Sys., Inc.'s Rule 56.1 Statement Uncontested Facts ¶ 12, Aug. 3, 2005; eScholar LLC's Resp. to Otis' [sic] Statement Pursuant Local Rule 56.1 ¶ 12, Sept. 9, 2005.

In his declaration, eScholar's expert, Martin Hubel, wrote that the people who designed the Otis data model had "significant access and exposure to the eScholar data model."

Shawn Bay said that Otis received copies of the entire eScholar program, including the data model, in early 2000. Otis received, among other things, the eScholar data model, DDL, the ETL processes, file structures, documentation, and instructions.

At least two Otis employees, Greg Newcom and Eddie Parker, reviewed eScholar's program to assess whether eScholar could port from the technology it was using to the Sagent technology. eScholar's program had to be ported to the new technology for it to be compatible with Otis's operating software, a product called School Data Bus. Otis signed a confidentiality agreement with eScholar.

Newcom was Otis's chief data model designer and Parker was Otis's founder. Newcom stated that the eScholar DDL he reviewed in early 2000 did not follow "standard conventions for dimensional modeling." Among the factors that he viewed as nonstandard was eScholar's use of multipart or composite keys in the dimensions—like District_Key. He stated that time required to recode the ETL and rewrite the reports led him to recommend eScholar not port the computer program.

Later, Otis again received eScholar's program pursuant to a Reseller Agreement, signed in October 2001, which contained a confidentiality provision. Parker stated that Otis did the ETL for eScholar—that is, they extracted data from student information systems, transformed the data into a format the eScholar program could read, and then loaded the data into eScholar's programs.

Otis brought its own data model program, AssessMart, to market sometime after its employees analyzed eScholar. Furthermore, Otis later worked for another company to design a data model for the Detroit Public Schools. Two other consultants had originally been hired to develop the model, but the company was unhappy with the model they created, which was unlike eScholar's, and chose, instead, to hire Otis. The model Otis delivered shared certain characteristics with eScholar's data model, as described below.

Hubel compared the two programs with six other data models from programs for the K-12 industry.[5] Hubel stated that no K-12 programs except eScholar and AssessMart used the "District_Key" in every table. Furthermore, he stated, using a multipart key—the tables contain both a column key that describes the table and the district key—permits the date to be organized and compiled in "a unique way." He described the use of the District_Key in this way as "highly unorthodox." Bay likewise described the District_Key as a way of organizing the data, as it was used in every table to permit the tables to be joined. Hubel stated that a District_Key also used in each of Otis's tables. District_Key was used as part of a multipart or composite key in eScholar's model. The parties agree that Otis also used a District_Key in its tables, but disagree about whether the key was part of a composite or multipart key in Otis's model.

Hubel stated that no other K-12 programs except eScholar and AssessMart used the combination of Student_Key and School_Year to uniquely identify students. He concluded that the eScholar data model must have been used in creating Otis's model. The School_Year field also permits the program to capture slowly changing dimensions, as explained above.

Bay stated that the way that eScholar handled assessment data was unique. Other vendors store the assessment date in different formats and structures. eScholar created a single structure that was composed of several tables, and contained four levels which aggregate student assessment information. Otis also aggregates assessment information into a single data structure containing four levels. Data from different tables could be combined into that one structure, which would make it easier for the user to analyze data across different kinds of assessments.

Ralph Kimball, Otis's data warehouse expert, acknowledged that authoring data models required creativity and originality. He noted that each computer programmer had to make design

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[5] He actually found eight other models total, but two of them were not completely documented on the Internet and could only be used to make limited comparisons.

choices to develop the data models based upon the types of data used in the industry. Ralph

Oman, Otis's copyright expert and former Registrar of Copyrights, likewise stated that it was

possible that there would be creativity in the creation of a data model for the K-12 industry.

c. Defendant Otis's Claims for Summary Judgment

Defendant Otis moved for summary judgment, alleging the following: (1) eScholar's

application to the copyright office was invalid and, thus, eScholar cannot enforce its claim of

copyright infringement against Otis; (2) the works eScholar seeks to enforce are not

copyrightable because they are ideas, methods of operation, and processes; (3) the selection,

coordination, and arrangement of data fields in eScholar's data model are not entitled to

copyright protection as they are (a) not original to eScholar; (b) unprotectable under the merger

doctrine; or (c) uncopyrightable under the *scenes a faire* doctrine; (4) there is no direct evidence

of copying.

We deny Otis's motions, finding that there are disputed questions of fact that preclude

summary judgment.

Otis further asserts that eScholar has failed to adduce any evidence that Otis resold its

product, and thus eScholar's breach of contract claim must fail at the summary judgment stage.

To the extent that Otis alleges that eScholar will not be able to prove certain facts required to

support its breach of contract claim, we hold that those are disputed questions of fact that

preclude summary judgment. Other arguments are inseparable from its claim, already ruled

upon by this court in *eScholar, LLC v. Otis Ed. Sys., Inc.*, No. 04 Civ. 4051,--- F. Supp.2d ----,

2005 WL 2186249 (S.D.N.Y. March 29, 2005), that eScholar's breach of contract claim is

preempted. Otis offers no new facts or legal analysis compelling enough to require

reconsideration of that decision.

d. Procedural Posture

This court already considered Otis's motion to dismiss eScholar's claims for breach of contract as preempted by copyright law. *See eScholar, LLC v. Otis Ed. Sys., Inc.*, No. 04 Civ. 4051, --- F. Supp.2d ----, 2005 WL 2186249 (S.D.N.Y. March 29, 2005). Adopting Magistrate Judge Yanthis's Report and Recommendation, the court granted Otis's motion in part, dismissing eScholar's claims regarding its exclusive right to reproduce and distribute its work. The court denied the motion to the extent eScholar sought to enforce contractual rights to audit books and receive royalty fees, as these claims provided the extra element necessary to make them qualitatively different from the copyright infringement claim.

II. Analysis

a. Summary Judgment Standard

Summary judgment is required when "there is no genuine issue as to material fact and . . . the moving party is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(c) (2005). If there is any evidence in the record from which a jury could draw a reasonable inference in favor of the non-moving party on a material fact, however, summary judgment is improper. *See Brady v. Town of Colchester*, 863 F.2d 205, 211 (2d Cir. 1988).

In assessing the record to determine if there is a genuine issue of material fact, the court must resolve all ambiguities and draw all factual inferences in favor of the nonmovant. *Vann v. City of New York*, 72 F.3d 1040, 1048-49 (2d Cir. 1995). The party opposing summary judgment cannot simply "rest upon mere conclusory allegations or denials, but must bring forward some affirmative indication that his version of relevant events is not fanciful." *Podell v. Citicorp Diners Club, Inc.*, 112 F.3d 98, 101 (2d Cir. 1997) (internal quotations omitted). Rule 56 requires that when one party makes and supports a summary judgment motion, the other party

"must set forth specific facts showing that there is a genuine issue for trial." Fed. R. Civ. Pro. 56(e). If the court then determines that a rational trier of fact, taking the record as a whole, could not find for the non-movant, "there is no 'genuine issue for trial.'" *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 587 (1986) (quoting *First National Bank of Arizona v. Cities Service Co.*, 391 U.S. 253, 289 (1968)).

b. Copyrighting Computer Programs

To prove copyright infringement, plaintiffs must show ownership of a valid copyright and unauthorized copying by the defendants. *See, e.g.*, *Computer Assoc. Int'l., Inc. v. Altai*, 982 F.2d 693, 701 (2d Cir. 1992); *Laureyssens v. Idea Group*, *Inc.*, 964 F.2d 131, 139 (2d Cir. 1992); *Rogers v. Koons*, 960 F.2d 301, 306 (2d Cir. 1992), *cert. denied*, 506 U.S. 934, 113 S.Ct. 365, 121 L.Ed.2d 278 (1992); *Folio Impressions, Inc. v. Byer California*, 937 F.2d 759, 763 (2d Cir. 1991).

i. Valid Copyright

1. The Copyright Act Requirements

The Copyright Act protects "original works of authorship fixed in any tangible medium of expression," 17 U.S.C. § 102(a), including "literary works." *Id.* at § 102(a)(1). Computer programs[6] are copyrightable as literary works. Legislative history makes clear Congress's intention to include as literary works "computer data bases, and computer programs to the extent that they incorporate authorship in the programmer's expression of original ideas, as distinguished from the ideas themselves." *See* H.R.Rep. No. 1476, 94th Cong., 2d Sess. 54, *reprinted in* 1976 U.S.C.C.A.N. 5659, 5667.

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[6] "A 'computer program' is a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result." 17 U.S.C. § 101 (2005).

A valid copyright is a prerequisite for subject matter jurisdiction. *See, e.g., Morris v. Bus. Concepts, Inc.*, 259 F.3d 65, 69, 73 (2d Cir. 2001). The Copyright Act explains that "no action for infringement of the copyright in any United States work shall be instituted until registration of the copyright claim has been made in accordance with this title." 17 U.S.C. § 411(a); *see also Whimsicality, Inc. v. Rubie's Costume Co.*, 891 F.2d 452, 453 (2d Cir. 1989) (holding that "proper registration is a prerequisite to an action for infringement"). Thus, in *Morris*, the Second Circuit held that an exclusive licensee of an article contained in a copyrighted compilation was not a "copyright owner" capable of satisfying the requirements of 17 U.S.C. § 411(a), and affirmed the district court's dismissal for lack of subject matter jurisdiction. *See* 259 F.3d at 73.

Under the Copyright Act, a certificate of registration obtained from the U.S. Register of Copyrights within five years of the date of first publication is *prima facie* evidence of "the validity of the copyright and of the facts states in the certificate." 17 U.S.C. § 410(c). The plaintiff's certificate of copyright registration "shifts the burden to the defendant to demonstrate why the copyright is not valid." *Bibbero Sys., Inc. v. Colwell Sys., Inc.*, 893 F.2d 1104, 1106 (9th Cir. 1990); *see also* 17 U.S.C. § 410(c); *Fonar Corp. v. Domenick*, 105 F.3d 99 (2d Cir. 1997). This presumption is rebuttable, however. *See Hasbro Bradley, Inc. v. Sparkle Toys, Inc.*, 780 F.2d 189, 192, 228 U.S.P.Q. (BNA) 423 (2d Cir. 1985); *see also Rogers*, 960 F.2d at 306; *Folio Impressions*, 937 F.2d at 763.

Copyright protection does not "extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which is it described, explained, illustrated, or embodied in such work." 17 U.S.C. § 102(b). Thus, original works that express an idea are protected; the *idea* itself is not. *See, e.g., Altai*, 982 F.2d at 703 (citing *Baker*

v. Selden, 101 U.S. 99 (1879)). Likewise, the computer programmer's expression of an idea

merits protection, but "the actual processes or methods embodied in the program are not within

the scope of copyright law." *See* H.R.Rep. No. 1476, 94th Cong., 2d Sess. 54, *reprinted in* 1976

U.S.C.C.A.N. 5659, 5670.

Copyright protection may extend to both literal and non-literal elements of a computer

program. *See, e.g.*, *Altai*, 982 F.2d at 702. The literal elements of the program are the source

code and object code.[7] The non-literal elements include the program's structure and "the various

steps a programmer employs prior to actually writing the instructions or source code." *Cognotec*

Services, Ltd. v. Morgan Guar. Trust Co. of New York, 862 F. Supp. 45, 49 n.3 (S.D.N.Y. 1994)

(citation omitted). Thus, a defendant may infringe a copyright if he copies the plaintiff's source

or object code, or the program's structure, including general flow charts and the more specific

organization of the program, including "inter-modular relationships, parameter lists, and

macros."[8] *Altai*, 982 F.2d at 702; *see also Whelan Assocs., Inc. v. Jaslow Dental Lab*, 797 F.2d

1222, 1234 (3d Cir. 1986), *cert. denied*, 479 U.S. 1031, 107 S.Ct. 877, 93 L.Ed.2d 83 (1987);

Cognotec Services, Ltd., 862 F. Supp. at 49 n.3 (citing Steven R. Englund, Note, *Idea, Process,*

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[7] Source code has been defined as, *inter alia*, "the spelled-out program commands that humans can read," *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 533 (6th Cir. 2004) and "a series of instructions written in a computer language such as COBOL, BASIC, or FORTRAN." *Softel, Inc.*, 118 F.3d at 959. Once the source code has been completed, it is translated or "compiled" into "object code," which is "the binary language comprised of zeros and ones through which the computer directly receives its instructions." *Computer Associates Int'l., Inc. v. Altai, Inc.*, 22 F.3d 32, 33 (2d Cir. 1994) (citing *Altai,* 982 F.2d at 698). Object code consists entirely of a series of zeros and ones, and dictates how a computer behaves. *See Altai,* 982 F.2d at 698.

[8] Note that non-literal and literal *elements* of a computer program are determined by looking to the program itself. Non-literal and literal *copying*, however, considers how the defendant allegedly copied the program. *See Ilog, Inc. v. Bell Logic, LLC*, 181 F. Supp.2d 3, 6-8 (D. Mass. 2002). Judge Young explains that "'[l]iteral copying is the verbatim copying of original expression, while 'non-literal' copying is that which is paraphrased, or loosely paraphrased." *Id.* at 6 (citing *Lotus*, 49 F.3d at 814). He explains that there can be, e.g., literal copying of non-literal elements and non-literal copying of non-literal elements, and decides that different tests should be applied depending on the type of copying alleged. *Id.* at 7-8. While we find that his recognition of literal and non-literal copying versus literal and non-literal elements is a useful analytic distinction, we do not join his decision to apply different tests for non-literal and literal copying for reasons explained in Part II(b)(ii).

or Protected Expression?: Determining the Scope of Copyright Protection of the Structure of Computer Programs, 88 Mich. L. Rev. 866, 870-72 (1990)).

Copyright protection of the non-literal elements of a computer program is analogous to protection that has been extended in other areas in this circuit. *See Sheldon v. Metro-Goldwyn Pictures Corp.*, 81 F.2d 49, 55 (2d Cir.) (holding that "a play may be pirated without using the dialogue"), *cert. denied*, 298 U.S. 669, 80 L. Ed. 1392, 56 S. Ct. 835 (1936). As Learned Hand explained, limiting copyright literally to the text would permit "plagiarist[s to] . . . escape by immaterial variations." *Nichols v. Universal Pictures Co.*, 45 F.2d 119, 121 (2d Cir. 1930), *cert. denied*, 282 U.S. 902, 51 S.Ct. 216, 75 L.Ed. 795 (1931). Rather, we must also protect the essence of the story. Even if none of the design elements of a computer program taken individually is protected expression, the "non-literal similarity of computer programs can constitute copyright infringement." *Softel, Inc. v. Dragon Med. & Sci. Communs.*, 118 F.3d 955, 963 (2d Cir. 1997), *cert. denied*, 523 U.S. 1020, 140 L. Ed. 2d 466, 118 S. Ct. 1300 (1998).

In *Harbor Software*, for instance, the court held that inter-relationships between modules were protectable. *Harbor Software, Inc. v. Applied Sys., Inc.*, 925 F. Supp. 1042, 1047 (S.D.N.Y. 1996). Thus, structural elements like data flow and control flow[9] may warrant copyright protection. *See id.* However, copyright protection did not extend to elements of the program that had such a high level of abstraction that their expression merged with their basic ideas. *See id.* at 1048-52.

Similarly, copyright protection may attach to a compilation if the author selected, coordinated, or arranged even uncopyrightable facts in an original way. *Feist Publ'ns, Inc. v.*

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[9] "Control flow is the sequence in which the modules perform their respective tasks. Data flow describes the movement of information through the program and the sequence with which it is operated on by the modules." *Harbor Software*, 925 F. Supp. at 1046 (quoting *Gates Rubber Co. v. Bando Chem. Indus., Inc.,* 9 F.3d 823, 835 (10th Cir. 1993)).

Rural Tel. Serv. Co., 499 U.S. 340, 362 (1991). While originality "does not require that facts be presented in an innovative or surprising way . . . the selection and arrangement of facts cannot be so mechanical or routine as to require no creativity whatsoever." *Id.* Thus, an alphabetical listing in a phone book was not protected, despite the labors of the author. Protectable selection implies that the author exercised "judgment in choosing which facts from a given body of data to include in a compilation." *Key Publ'ns, Inc. v. Chinatown Today Publ'g Enters., Inc.,* 945 F.2d 509, 513 (2d Cir. 1991). Thus, "if the selection process imbues a compilation with the requisite creative spark, the compilation may be protected so long as there are indicia that principles of selection (other than all-inclusiveness) have been employed." *Silverstein v. Penguin Putnam, Inc.,* 368 F.3d 77, 83 (2d Cir. 2004) (holding that plaintiff who compiled a poet's uncollected poems may be entitled to copyright protection if his selection process involved more than seeking every uncollected poem or if he employed an original standard in determining which works should be classified as "poetry").

2. Compliance with Copyright Office Requirements

Possession of a valid copyright registration is a jurisdictional prerequisite to an infringement action, and creates a rebuttable presumption that the work in question is copyrightable. *See* 17 U.S.C. §§ 410(c), 411(a); *see also Sparaco v. Lawler, Matusky, Skelly Eng'rs LLP*, 2000 U.S. Dist. LEXIS 22177 *19 (S.D.N.Y. 2000), *rev'd on other grounds by* 303 F.3d 460, 469 (2d Cir. 2002) (vacating later summary judgment). While a certificate of copyright registration creates a presumption of copyrightability, "the existence of a registration certificate is not dispositive" and merely shifts the burden to the defendant to prove that the plaintiff's copyright was invalid. *Woods v. Bourne Co.*, 60 F.3d 978, 990 (2d Cir. 1995) (citing

Weissmann v. Freeman, 868 F.2d 1313, 1320-21 (2d Cir.), *cert. denied,* 493 U.S. 883, 110 S.Ct. 219, 107 L.Ed.2d 172 (1989).

As the Second Circuit stated in *Fonar*, however, the party disputing the validity of a copyright "cannot win summary judgment unless there are no disputed issues of material fact with respect to the validity of [the] copyright for the . . . software." *Fonar Corp.*, 105 F.3d at 103. Furthermore, "[t]he Copyright Office has expertise to determine in the first instance whether a filer has complied with the technical requirements for a registration certificate." *Id.* at 105. Finally, at least one court has treated the question of compliance with the copyright registration requirements as a question of fact, not of law. *See SAS Inst. Inc. v. S & H Computer Sys., Inc.*, 605 F. Supp. 816, 827 (M.D. Tenn. 1985). The court will nevertheless review the requirements for a valid copyright to determine if defendant Otis rebutted the presumption of validity that attaches to an accepted copyright application. *See* 17 U.S.C. §§ 410(c).

a. Circular 61

The Copyright Office sets forth guidelines for valid copyright registration for computer programs. *See* Circular 61: Copyright Registration for Computer Programs, *available at* http://www.copyright.gov/circs/circ61.pdf. Circular 61 requires the applicant to deposit computer source code or object code to obtain copyright in computer programs. *Id.*; *see also Xoom, Inc. v. Imageline, Inc.,* 323 F.3d 279, 285 (4th Cir.), *cert. denied,* 540 U.S. 879, 124 S.Ct. 303, 157 L.Ed.2d 143 (2003). Circular 61 waives the requirement that an applicant deposit source code when the code contains copyrightable authorship. Circular 61 at 2. However, the applicant must still "state in writing that the work as deposited in object code contains copyrightable ownership." *Id.*

In *Xoom*, the Fourth Circuit found that the party complaining of infringement did not own a valid copyright in the computer programs it claimed were infringed as it did not comply with the requirements of Circular 61, and, alternatively, there was "no evidence that the computer programs were registered because there is no letter from the Copyright Office stipulating registration in the computer programs." *Xoom,* 323 F.3d at 285. Thus, it could not fulfill its burden of showing that its works were protected. *Id.*

Some degree of noncompliance with the copyright requirements is not necessarily fatal to a copyright infringement action. In *Fonar*, the Second Circuit held that that plaintiff still enjoyed the presumption of copyright validity even if the filing with the copyright office did not identify the works that were the subject of the copyright. *See* 105 F.3d at 104-05. Thus, the district court erred when it granted the defendant's motion for summary judgment after finding that the plaintiff did not comply with the code depositing requirement. *See id.* In *Fonar,* however, the alleged noncompliance related to minor differences between the source code filed, likely in compliance with Circular 61, in the Copyright Office and the source code that the defendant was accused of copying. *See id.* at 105-06.

Similarly, the plaintiff in *Altai* registered his computer program as a "derivative work" even though he had not registered the original work from which this program was derived. *Altai,* 775 F. Supp. 544, 556-557 (E.D.N.Y.1991), *overturned on other grounds,* 982 F.2d 693, 701 (2d Cir. 1992). While the work should have been registered as an "original work," the court found that the error was only technical and that no one's rights would have been affected had the work been described as original when it was registered. *Altai,* 775 F. Supp. 544 at 557. The court noted that a "formalistic dismissal, followed by a re-registration and commencement of a new action, is unnecessary and would be wasteful." *Id.*

If eScholar's copyright is invalid, this court does not have subject matter jurisdiction and the complaint must be dismissed. *See, e.g.*, *Morris*, 259 F.3d at 73. Otis states that the material eScholar deposited at the Copyright Office was not "source code," and thus eScholar did not abide by the Circular 61 requirement that the applicant for a computer program copyright deposit either source code or object code. eScholar states that the material it deposited was "source code" or "source code equivalent."

Thus, the parties dispute whether the "data model" deposited by eScholar as part of its copyright application is "source code," or "source code equivalent," or something else that does not comply with the requirements set forth in Circular 61. Otis has the burden of rebutting the presumption of validity that attached when the Copyright Office accepted eScholar's registration. *See, e.g.*, *Woods*, 60 F.3d at 990. As Otis's expert acknowledged, however, the copyright examiner who registered eScholar's copyrights "would have had to have been convinced that there was sufficient source code or object code to qualify as a computer program." (Oman Dep. at 100).

Courts have defined "source code" in various ways.[10] While the "data model" does not look like traditional "source code," this court does not find that the copyright examiner erred, *as a matter of law*, in finding that the data model sufficed to fulfill the requirements in Circular 61, as "[t]he Copyright Office has expertise to determine in the first instance whether a filer has complied with the technical requirements for a registration certificate." *Fonar Corp.*, 105 F.3d at 105. Furthermore, whether a party has complied with the copyright registration requirements is

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[10] "Source code is a textual computer language that human programmers can read." *General Universal Systems, Inc. v. Lee*, 379 F.3d 131, 143 n.20 (5th Cir. 2004).
Source code is "the literal text of a [computer] program's instructions written in a particular programming language." *Gates Rubber Co. v. Bando Chem. Indus.*, 9 F.3d 823, 835 (10th Cir. 1993).
"Source code is the computer program code as the programmer writes it, using a particular programming language." Compendium of Copyright Office Practices, § 321.01. "Source code is a high level language that people can readily understand." *Id.* at § 321.02.

arguably a question of fact, not of law. *See SAS Institute Inc.*, 605 F. Supp. at 827. Whether eScholar's deposit was "source code," or "source code equivalent," or something else that does not fulfill the requirements of the Copyright Office—which, Otis's expert acknowledges, must have viewed the deposit as "source code" to accept it—is a genuine issue of material fact, and Rule 56 precludes summary judgment.

b. The Innocent Error Defense

Parties who attempted to comply with the copyright requirements but failed to do so may assert the "innocent error" defense. In the Second Circuit, "only the knowing failure to advise the Copyright Office of facts which might have occasioned rejection of the application constitute[s] reason for holding the registration invalid and thus incapable of supporting an infringement action." *Eckes v. Card*, 736 F.2d 859, 859 (2d Cir. 1984); (citing *Russ Berrie & Co., Inc. v. Jerry Elsner Co., Inc.*, 482 F. Supp. 980 (S.D.N.Y. 1980)). The innocent error rule applies if the error is a "technical misdescription . . . [that] could readily be corrected," like erring in designating the proper "copyright claimant." *Wales Industrial Inc. v. Hasbro Bradley, Inc.*, 612 F. Supp. 510, 515 (S.D.N.Y. 1985).

In *Tradescape.com v. Shivaram*, the court determined that the presumption of validity conferred by the copyright registration was not rebutted as the defendants "put forth no evidence that plaintiff's misstatement, if there was one, was deliberate. *See* 77 F. Supp.2d 408, 414 (S.D.N.Y. 1999). The court noted that the defendant would also have to show that the Copyright Office might have rejected the plaintiff's application if it had not made that misstatement. *Id.* at 415 n.27 (citing *Eckes,* 736 F.2d at 861-62 (citing *inter alia Russ Berrie & Co., Inc. v. Jerry Elsner Co., Inc.,* 482 F. Supp. 980, 988 (S.D.N.Y. 1980))).

While the plaintiff in *Xoom* sought to use the "innocent error" defense, the Fourth Circuit

noted that the copyright office contacted the plaintiff and notified it that the application was

incorrect. 323 F.3d at 283 n.4. As the plaintiff, once notified of its error, failed "to make the

necessary corrections to its application for copyright registration," its mistake "cannot be

considered innocent." *Id.*   Thus, the registration was outside of the "innocent error" exception

and the copyright was invalid. *Id.; cf. Serv. and Training, Inc. v. Data Gen. Corp.*, 963 F.2d 680,

689 (4th Cir. 1992) (holding that a copyright was not invalidated where there was no evidence

that a party intentionally failed to inform the Copyright Office of the "software's derivative

nature").

Other circuits have suggested, however, that an unintentional but material error may

invalidate a copyright. *See Data Gen. Corp. v. Grumman Sys. Support Corp.*, 36 F.3d 1147,

1163 (1st Cir. 1994). For instance, the First Circuit wrote in *Data General* that "[n]o court has

suggested that a registration premised in part on an unintentional material error would fail to

satisfy the jurisdictional requirement of Section 411(a)." *Id.* However, even the *Data General*

court held that "an error is [generally] immaterial if its discovery is not likely to have led the

Copyright Office to refuse the application," suggesting that copyright examiners' decisions

should be granted deference when determining whether an error is "material." *Id.* at 1161.

Errors that "render the registrations completely inaccurate" are not protected by the

harmless error rule. *See Morris*, 259 F.3d at 72. Thus, an author's individual work was not

protected where the magazine publisher that published it properly obtained copyright for issues

of its magazines as "collective works" but "contained none of the information required by § 409

for proper registration of the articles, such as [the author's] name, the title of her articles, or the

proper copyright claimant." *Id.* While the author continued to retain all rights to her work, she

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was required to fulfill the copyright requirements to be able to protect her work from future infringers. *Id.* at 73. Notably, in *Morris*, unlike in *Data General*, the entity asserting copyright protection had made no attempt to register the work at issue. *Compare id. with Data General*, 36 F.3d at 1161.

Here, even if eScholar did not comply with the Circular 61 requirements, the innocent error defense would apply. The Second Circuit, in particular, takes an expansive view of the defense, requiring that the person asserting the copyright to have knowingly failed to tell the Copyright Office about facts that might have required the office to reject the application. *Eckes*, 736 F.2d at 859.

Neither party asserts that eScholar intentionally kept facts from the Copyright Office. Instead, like the defendants in *Tradescape.com*, Otis has not shown, or even alleged, that any misstatement by eScholar was deliberate, nor has it alleged or provided any information that the Copyright Office might have rejected eScholar's application if it had not made the misstatement. 77 F. Supp.2d at 414, 415 n.27. The "misstatement" alleged here is that eScholar deposited its data model, which, as discussed above, it alleges was "source code" or "source code equivalent"; given that the Copyright Office accepted the eScholar application, it clearly would have accepted eScholar's application had it contained what Otis asserts would be the "proper" source code.

Unlike the plaintiff in *Morris*, eScholar did submit an application and deposit to the Copyright Office. *Morris*, 259 F.3d at 72, 73. *Xoom* is likewise distinguishable: the plaintiff in *Xoom* was warned that the application did not comply with copyright requirements but chose not to fix the mistake—so any error there was, simply, not innocent. *Xoom*, 323 F.3d at 283 n.4. Here, eScholar changed the description of its program from "computer program data model" to just "data model" at the request of the copyright examiners. There is no suggestion that eScholar

refused to comply with any other requests from the Copyright Office, or that the copyright examiner had any unsatisfied concerns.

Finally, we do not find, as a matter of law, that the alleged error in eScholar's application rendered it "completely inaccurate." *See Morris*, 259 F.3d at 72. In *Morris*, the plaintiff's article was copyrighted, if at all, as part of a "collective work" registered by a third party where it should have been individually copyrighted as an article for the plaintiff to assert a viable copyright infringement claim. *See id.* The registration in *Morris* did not include the title of the article, the name of the writer, or the name of the proper copyright claimant—all requirements for the work at issue to be registered as an article. *Id.* Here, there was no question about which work eScholar intended to register; if there was an inaccuracy, it was with the "source code" deposit. This court finds that any errors here were unintentional, would not have led to the rejection of the application if they were discovered, and did not render the application completely inaccurate as a matter of law. Thus, eScholar's copyright is not invalid as a matter of law even if it did not comply with the technical requirements of Circular 61, as any error, if an error exists, falls under the innocent error defense.

3. Copyrightability of eScholar's Program

Even if eScholar fulfilled the requirements of Circular 61, the copyright may be invalid if the computer program was not copyrightable as a matter of law. *See, e.g., . Fonar Corp.*, 105 F.3d at 104. "In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work." 17 U.S.C. § 102(b). Thus, "the expression adopted by the programmer is the copyrightable element in a computer program[;] the actual processes or methods embodied in the program are

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not within the scope of copyright law." *See* H.R.Rep. No. 1476, 94th Cong., 2d Sess. 54, *reprinted in* 1976 U.S.C.C.A.N. 5659, 5670. Here, Otis claims that the elements of eScholar's program that eScholar alleges Otis copied are not entitled to copyright protection as they lack originality and are merely ideas, methods of operation, or processes.

While the copyright registration confers a presumption of validity, summary judgment may be appropriate if that presumption is rebutted. Thus, a district court may grant summary judgment if the statutory language, legislative history, and recent case authority support the conclusion that the work in question is not copyrightable as a matter of law. *See Carol Barnhart Inc. v. Economy Cover Corp.,* 773 F.2d 411, 413 (2d Cir. 1985). (citing *Carol Barnhart Inc. v. Economy Cover Corp.*, 594 F. Supp. 364, 370 (E.D.N.Y. 1984)).[11]

The *Fonar* court collected examples of when the presumption of validity was rebutted. *Fonar Corp.*, 105 F.3d at 104. The presumption may be rebutted "[w]here *other evidence* in the record casts doubt on the question." *Id.* (quoting *Durham Indus., Inc. v. Tomy Corp.,* 630 F.2d 905, 908 (2d Cir. 1980) (emphasis added in *Fonar*)). Alternatively, the presumption may be rebutted using evidence that copyrighter copied the work from the public domain, *see id.* (citing *Folio Impressions,* 937 F.2d at 763, 764), or by showing that the work was a non-copyrightable utilitarian article. *See id.* (citing *Carol Barnhart Inc.,* 773 F.2d at 414). Thus, "validity should not be assumed where other evidence casts doubt upon the integrity of the copyright." *Past Pluto Productions Corp. v. Dana*, 627 F. Supp. 1435, 1440 (S.D.N.Y. 1986).

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[11] The works in question in *Carole Barnhart* were mannequin torsos—useful articles that could not be copyrighted unless embellished by "a physically or conceptually separable work of art." *Carol Barnhart Inc.*, 773 F.2d at 413 (quoting 594 F. Supp. at 370). As these torsos were not thus embellished, they were merely noncopyrightable "useful articles" and any copying done by the defendant was not actionable under copyright law. *Id.*

Judge McMahon held, however, that once plaintiffs "presented prima facie evidence of copyrightability, . . . defendants [were] not entitled to summary judgment on that ground." *Ronald Litoff, Ltd. v. American Express Co.*, 621 F. Supp. 981, 984 (S.D.N.Y. 1985).

Here, we will explore further the issues of originality, ideas versus expression, methods of operation, and processes, and then consider whether each element eScholar alleges Otis infringed is uncopyrightable.

a. Originality

Originality is a constitutional requirement. U.S. Const. Art. I, § 8, cl. 8. Copyright protection can extend only to original authorship. *Feist Publ'ns, Inc.*, 499 U.S. 340, 347-48 (1991). The standard for originality is far from vigorous, however. *See Key Publ'ns, Inc. v. Chinatown Today Pub. Enter., Inc.*, 945 F.2d 509, 513 (2d Cir. 1991). "Original" merely means that the work was not copied and exhibits a minimal amount of creativity; "originality is not synonymous with novelty." *Id.* at 512, 513. Thus, copyright protection attaches to a compilation if the author collected and assembled non-original materials or data, as long as that otherwise unprotected data was "selected, coordinated, or arranged in such a way that the resulting work as a whole constitutes an original work of authorship." 17 U.S.C. § 101 (2005). Copyright protection for compilations is "thin," however, and does not protect the underlying facts themselves. *Feist*, 499 U.S. at 349. This means that subsequent authors may copy unprotected facts and use this data in their own works, as long as they do not utilize the same selection and arrangement criteria. *See id.*

Originality in selection and arrangement "is a function of (i) the total number of options available; (ii) external factors that limit the viability of certain options and render others non-creative; and (iii) prior uses that render certain selections 'garden variety.'" *Matthew Bender &*

Co. v. West Publ'g Co., 158 F.3d 674, 682-83 (2d Cir. 1998), *cert. denied sub nom.*, *West Publ'g*

Co. v. HyperLaw, Inc., 526 U.S. 1154, 119 S. Ct. 2039, 143 L. Ed.2d 1048 (1999). Thus, if

features of a work are "ubiquitous within an industry," those features may not be original.

Mattel, Inc. v. Goldberger Doll Mfg. Co., 365 F.3d 133, 135 n.2 (2d Cir. 2004).

When assessing a compilation for originality, "creativity inheres in making non-obvious

choices from among more than a few options." *Id.* at 682. In *Matthew Bender*, the Second

Circuit noted that it treated the issue of whether a work's elements were adequately original and

creative to warrant copyright protection as a "question for the factfinder." *Matthew Bender &*

Co., Inc., 158 F.3d at 681; *see also Financial Information, Inc. v. Moody's Investors Service,*

Inc., 808 F.2d 204, 207 (2d Cir 1986) ("The district court's determination of whether the work

was sufficiently original to merit copyright protection was one of fact.")[12]

The publication of facts organized in a manner that is "firmly rooted in tradition and so

commonplace that it has come to be expected as a matter of course" is not original authorship

and merits no copyright protection. *Feist Publ'ns, Inc.*, 499 U.S. at 347-48. Thus, a publisher of

white pages in a phone book could not prevent a competitor from copying the listings it gathered,

regardless of the effort expended to gather those facts, as it merely alphabetized the listings. *Id.*

However, even a work comprised entirely of facts "meets the constitutional minimum for

copyright protection if it features an original selection or arrangement." *Id.* at 348.

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[12] The Second Circuit explained how a judge in a bench trial would deal with the issue of originality. First, he "must make findings of fact based upon a comparison of two works." *Woods v. Bourne Co.*, 60 F.3d 978, 991 (2d Cir. 1995). Second, the judge must "then apply the legal standard of originality to the facts to determine whether the standard has been met." *Id.* The court noted that this appeared to be "a two-step process, with review of the factual findings governed by a clearly erroneous standard and the legal conclusion subject to de novo review." *Id.* However, "most courts, including this one, apparently view the process as purely a factual inquiry, reviewable for clear error alone." *Id.* Thus, where there are disputed facts regarding the originality of eScholar's program, we must construe them in eScholar's favor.

Holding that the validity of a plaintiff's "copyright in a compilation of facts cannot be rejected as a matter of law for lack of the requisite originality and creativity," the Second Circuit overturned the district court's grant of summary judgment in a case where the plaintiff and defendant published compilations of baseball statistics. *See Kregos v. Associated Press*, 937 F.2d 700, 705 (2d Cir. 1991). the Second Circuit explained "some aspects" of the plaintiff's descriptions of grocery store products "may involve original selection" and would thus be protected from copying. *MyWebGrocer, LLC v. Hometown Info, Inc.*, 375 F.3d 190, 193 (2d Cir. 2004). Thus, the plaintiff might have "a narrow copyright in its product descriptions that protects them from wholesale copying." *Id.*[13] Similarly, in *Kregos v. Associated Press*, choosing to calculate a pitcher's performance by using only nine statistics from "at least scores" of available pitching statistics "was not necessarily obvious or self-evident." *See* 937 F.2d at 704. The district court thus erred in finding the pitching forms uncopyrightable as a matter of law and granting summary judgment. *Id.* Similarly, the Seventh Circuit held that a taxonomy of dental procedures was creative, noting that these procedures "could be classified . . . in any of a dozen different ways." *American Dental Ass'n v. Delta Dental Plans Ass'n,* 126 F.3d 977, 979 (7th Cir. 1997) (cited by *Matthew Bender & Co., Inc.*, 158 F.3d at 682).

In *Durham Industries*, however, the district court concluded that the works at issue lacked "the element of originality that is necessary to support a valid copyright." *Durham Industries, Inc.*, 630 F.2d at 908 -909. Here, the plaintiff attempted to copyright plastic, mechanical reproductions of well-known Disney characters Mickey Mouse, Donald Duck, and Pluto. *Id.* at 908. Holding that there was "no independent creation, no distinguishable variation from preexisting works, nothing recognizably the author's own contribution" to distinguish the

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[13] As the issue was whether the court below properly refused to grant a preliminary injunction, the court noted that it was unclear that the plaintiff would succeed on the merits and thus the claim merely "presented . . . a fair grounds for litigation." *Id*

toys from "the prototypical Mickey, Donald, and Pluto," the Second Circuit affirmed the district court's grant of summary judgment. *Id.* at 908-09.

Other courts have considered whether computer programs showed a sufficient degree of originality in either selecting for pre-existing elements or assembling data that was not, itself, copyrightable. Copyright protection attached where a programmer built a program by selecting from a variety of pre-existing forms, buttons, and fields. *Maddog Software, Inc. v. Sklader*, 382 F. Supp.2d 268, 276 (D.N.H. 2005). His selection "transcended the obvious and imbued the program with at least the minimal degree of creativity necessary for copyright protection of the work as a whole." *Id.*

Similarly, copyright protection attached where a real estate assessment program arranged 456 fields worth of data into 34 categories because no other program arranged the data in that way, and because the structure was not sufficiently obvious or inevitable to lack the minimal originality required by *Feist. Assessment Techs. of WI, LLC v. WIREdata, Inc.,* 350 F.3d 640, 643 (7th Cir. 2003) (citing *Feist Publ'ns, Inc.*, 499 U.S. at 362-64.). Thus, the database program was copyrightable as a whole, even though the owner could not then use that copyright to shield the data, which was part of the public record, itself. *Id.* at 642-43.

Here, eScholar claims protection for, *inter alia*, the overall selection, coordination, and arrangements of the fields and entities in its data model. It does not claim that the data loaded into the program is protected. *Cf. Assessment Techs. of WI., LLC,* 350 F.3d at 643. Otis claims that the selection and listing of eScholar's data fields is not protected because these fields are dictated by the clients' needs and reporting requirements, including those contained in the No Child Left Behind Act.

To determine if eScholar's model exhibited sufficient originality to merit copyright

protection, we first consider total number of options eScholar had regarding the tables and fields

it included in its model. *Matthew Bender & Co., Inc.*, 158 F.3d at 682. eScholar's options about

what tables and elements to include in its data model were limited by the data that schools

traditionally gathered, and, pragmatically, by things like the school clients' needs and the

reporting requirements for national and local governments. eScholar had options about how to

order and process this data, however, and its experts noted that there were several ways that

eScholar's and Otis's computer programs were similar to each other but different from other K-

12 programs. In *Maddog Software*, the software programmer only had a finite number of forms,

buttons, and fields from which to choose; as his selection "transcended the obvious," his program

was protected. *See* 382 F. Supp.2d at 276. Here, we find that it is at least a disputed question of

fact whether eScholar's decisions regarding the selection, coordination, and arrangements of the

fields in its data model "transcended the obvious." *Id.* As Otis's witnesses noted, there were

elements of the eScholar program that did not follow the standard conventions used in

dimensional modeling. eScholar could have manipulated the data in different ways by, for

example, not using the District_Key to join tables. *See American Dental Ass'n*, 126 F.3d at 979.

Next, we consider external factors that may limit the viability of some options and render

others non-creative. *Matthew Bender & Co., Inc.*, 158 F.3d at 682. eScholar's options about

what data to include in its data model were, again, limited by the external factors like

dimensional modeling techniques, state and federal regulations, and state or school district

organizational requirements. However, unlike the phone book author in *Feist*, eScholar's

programmers still made choices about how to order and process this data, and eScholar's

programming decisions differed from those made by other programmers in the K-12 industry.

Feist Publ'ns, Inc., 499 U.S. at 347-48. Here, eScholar arguably developed a new way to order and process preexisting data, unlike the plaintiff in *Durham*, who merely replicated characters that were already copyrighted. *See Durham Indus.*, 630 F.2d at 908-09. Like the real estate program in *Assessment Technologies*, eScholar arranged preexisting data in a novel way. *Assessment Techs. of WI*, 350 F.3d at 643.

Finally, we consider if the selection criteria were merely "garden variety," like the ordering of the white pages in *Feist*. *Feist Publ'ns, Inc.*, 499 U.S. at 347-48. eScholar arguably used selection criteria that were not so "firmly rooted in tradition" as to be unoriginal as a matter of law. *Cf. id.* eScholar's program did not consist only of elements that were "ubiquitous" within an the programming industry; other K-12 programs differed in how they handled issues such as how to deal with gathering information across multiple districts and handling disparate assessment data. *Mattel, Inc.*, 365 F.3d at 135 n.2.

The Second Circuit found that the compilation of baseball statistics in *Kregos* and the descriptions of grocery store products in *MyWebGrocer* were creative enough to present triable issues of fact. *See Kregos*, 937 F.2d at 705; *MyWebGrocer, LLC*, 375 F.3d at 193. Given the Second Circuit's articulated standard for originality, *see, e.g.*, *Key Publications, Inc.*, 945 F.2d at 513, and the fact that no other K-12 programs employed certain structural arrangements used by eScholar and later by Otis, we cannot say that, as a matter of law, the eScholar program was insufficiently original to be copyrighted.

b. The Idea/Expression Distinction

Levels of a program that are most abstract, such as its main purpose, are unprotectable ideas. *See, e.g.*, *Gates Rubber Co. v. Bando Chem. Indus., Ltd.*, 9 F.3d 823, 836 (10th Cir. 1993). The literal elements of a program, like source and object code, are almost always found

to be protectable expression. *See Altai,* 982 F.2d at 702. Beyond that, determining what is an

"idea" and what is an "expression" of an idea is, as the *Altai* court noted, "tricky business." *Id.*

at 704; *see also Gates Rubber*, 9 F.3d at 836 (explaining that "intermediate levels of abstraction,

such as structure, sequence, organization, and the like, are less prone to generalizations"

regarding whether they are ideas or expressions). Copyright protection for non-literal

components of a program, like the structure, sequence, and organization and user interface,

"depends on whether, on the particular facts of each case, the component in question qualifies as

an expression of an idea, or an idea itself." *Johnson Controls, Inc. v. Phoenix Control Sys., Inc.*,

886 F.2d 1173, 1175 (9th Cir. 1989).

The difficulty of separating idea from expression resulted in the Ninth Circuit reversing a

grant of summary judgment because the case was not one "where the 'idea' ... is

indistinguishable, *as a matter of law*, from the 'expression' of that idea." *Goodson-Todman*

Enter., Ltd. v. Kellogg Co., 513 F.2d 913, 914 (9th Cir. 1975) (emphasis in original). Similarly,

the Third Circuit suggested that the question of whether a copyrighted work is an unprotected

idea or protected expression was a question of fact. *See Apple Computer Inc. v. Franklin*

Computer Corp., 714 F.2d 1240, 1253 (3d Cir. 1983), *cert dismissed* 464 U.S. 1033, 104 S. Ct.

690, 79 L. Ed.2d 158 (1984).

Drawing the line between idea and expression in the computer programs context is

particularly complicated and tricky business. *See Altai*, 982 F.2d at 704. Computer programs

are "essentially utilitarian" and generally written in a practical, process-oriented fashion. *See id.*

The processes described in the program itself, and any aspects of the work that "must necessarily

be used as incident to" the systems, processes, or ideas the work describes, are not copyrightable.

See id. (quoting *Baker v. Selden*, 101 U.S. 99, 104 (1879) (holding there was nothing

copyrightable in the plaintiff's bookkeeping system)).

Here, Otis claims that eScholar's District_Key is merely an idea that eScholar created to

enable its customers to store and retrieve reports from a database in a certain manner. eScholar

states that the District_Key is the expression of that idea. This is not a case where the idea is

indistinguishable, as a matter of law, from the expression of that idea. *See Goodson-Todman*

Enter., Ltd., 513 F.2d at 914. Arguably, at least, the "idea" is to permit the storage and retrieval

of multiple districts' information in one database, and the "expression" of that idea is the

District_Key, which permits the districts' data to be processed. Furthermore, it appears the

District_Key is a literal element of the program more like source code, which is generally

protectable as expression. *See Altai*, 982 F.2d at 702. Given the difficulty of drawing the line

between idea and expression in computer programs, *see id.* at 704, this court holds that the

question of whether the District_Key constitutes an idea or expression is a disputed question of

fact not ripe for summary judgment. *See Apple Computer, Inc.*, 714 F.2d at 1253.

c. Method of Operation/ Process

A method of operation is not copyrightable. 17 U.S.C. § 102(b). Thus, the actual

processes or methods contained in a computer program are not protectable. *Altai,* 982 F.2d at

703. Methods of operation "describe the way that the program works and the manner in which

the user operates the program." *O.P. Solutions v. Intellectual Prop. Network, Ltd.,* 96 Civ. 7952,

1999 WL 47191 at * 16, 1999 Copr.L.Dec. P 27,887, 50 U.S.P.Q.2d 1399, 50 U.S.P.Q.2d 1818

(S.D.N.Y. Feb. 2, 1999). While the method that instructs a computer to perform a certain

function is unprotectable, the instructions themselves, are copyrightable. *See Apple Computer,*

Inc., 714 F.2d at 1251. Like the difficulty in determining whether something is an idea or an

expression, the line between copyrightable instructions and uncopyrightable methods of operation or processes "does not always seem to 'shimmer with clarity.'" *Id.* (citing National Commission on New Technological Uses of Copyrighted Works, *Final Report* 18 (1979)).

The First Circuit held that a computer program's menu command hierarchy was an uncopyrightable method of operation because it provided the means by which users controlled and operated the system. *Lotus Dev. Corp. v. Borland Int'l, Inc.*, 49 F.3d 807, 814 34 U.S.P.Q.2d (BNA) 1014 (1st Cir. 1995), *cert. granted*, 515 U.S. 1191, 116 S. Ct. 39, 132 L. Ed. 2d 921 (1995), *motion granted*, 516 U.S. 1007, 116 S. Ct. 561, 133 L. Ed. 2d 487 (1995), *motion granted*, 516 U.S. 1040, 116 S. Ct. 695, 133 L. Ed. 2d 653 (1996), *judgment aff'd by equally divided court*, 516 U.S. 233, 116 S. Ct. 804, 133 L. Ed. 2d 610 (1996)). The court defined a method of operation as "the means by which a person operates something" and found that the menu command hierarchy was unprotectable since it was merely the "method by which the program is operated and controlled." *See id.* at 815. Analogizing the commands in the menu— like "print"—to the buttons on a VCR, the court explained that these commands were necessary to provide an interface for the user and merely ways to operate the program itself. *See id.* at 818. Even if there were many other ways to operate the computer program, the actual method of operation was uncopyrightable. *See id.* The screen displays, on the other hand, had "little bearing on how users control the program" so were not uncopyrightable as methods of operation. *See id.* at 816.

In the Tenth Circuit, a method of operation "may nevertheless contain expression that is eligible for copyright protection." *Mitel, Inc. v. Iqtel, Inc.*, 124 F.3d 1366, 1373 (10th Cir. 1997). In *Mitel*, the defendant was alleged to have copied "a discrete, easily-conceptualized portion" of

the plaintiff's work: the command codes for call controllers.[14] At a higher level of abstraction,

the codes would be "embodied" in a method of operation as they "comprise[d] the method by

which a long distance carrier matches the call controller's functions, the carrier's technical

demands, and the telephone customer's choices." *Id.* at 1371. Nevertheless, the court did not

find the codes uncopyrightable as methods of operation and instead applied *Altai's* Abstraction-

Filtration-Comparison analysis to determine if they were protectable. *See id.* The *Mitel* court

noted that it disagreed with *Lotus*, where even "specific words" that were essential to operate

something were unprotectable if they comprised a method of operation. *See id.* at 1372. (quoting

Lotus, 49 F.3d at 816).

"That the words of a program are used ultimately in the implementation of a process

should in no way affect their copyrightability." *Apple Computer, Inc.*, 714 F.2d at 1251 (quoting

CONTU Report at 21). Thus, a computer system program may be seen as analogous to

"instructions . . . written in ordinary English in a manual which described the necessary steps to

activate an intricate complicated machine." *Id.* at 1251. ("The copyright status of the written

rules for a game *or a system for the operation of a machine* is unaffected by the fact that those

rules direct the actions of those who play the game or *carry out the process.*"(citation omitted)

(emphasis added)).

The arrangement of components of a program that are, individually, methods of operation

may be protected. The steps that the user took in entering and organizing information in a

computer program's "action grid," which permitted the user to retain and display all current and

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[14] As the court explained:
> A call controller is a piece of computer hardware that enhances the utility of a telephone system
> by automating the selection of a particular long distance carrier and activating optional features
> such as speed dialing. Typically, a long distance carrier purchases a call controller from a
> manufacturer like Mitel or Iqtel and installs it on the premises of its business customer to
> automate that customer's access to the carrier's long distance service.

Id. at 1368.

historical actions in a single grid, were unprotectable as methods of operation. *OP Solutions,*

1999 WL 47191 at * 16, * 18. Also unprotectable as methods of operation were: functions that

the grid performed, *id.* at * 16, the way that the program worked, and how the user operated the

program. *Id.* at * 17. The selection, arrangement and display of these options in the grid may be

protected, however; that protection would be "limited to the appearance of the grid itself, not to

the underlying processes offered by or performed through the grid." *See id.* at * 19; *accord*

Softel, Inc, 118 F.3d at 963 ("[A]n allegation of infringement based on similarities in architecture

cannot be ignored merely because many or all of the design elements that make up that

architecture are not protectible when considered at a lower level of abstraction.").

The algorithm in software that permitted the user to parse the Hebrew Bible was

uncopyrightable as a method of operation. *See Torah Soft Ltd. v. Drosnin,* 136 F. Supp.2d 276,

280, 282 (S.D.N.Y. 2001). The software permitted the user search the Bible at "equidistant letter

skips"—that is, to see if a message would appear if one skipped X number of letters and then

created a word or phrase with the remaining letters. *See id.*[15] The court thus granted the

defendant's motion for summary judgment.

Mitel suggests that expressive elements that are components of a "method of operation"

might be protectable if they are literally copied. *Mitel, Inc.*, 124 F.3d at 1373. Thus, if "ABC" is

a method of operation, a defendant may nonetheless be liable if he literally copies "A." *OP*

Solutions suggests that separate methods of operation may be arranged in an original, creative

way and merit protection. *OP Solutions,* 1999 WL 47191 at * 16-19. Thus, if "ABC" and

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[15] For example, as the court explained, "letters forming the name 'Yitzhak Rabin' are found consecutively
only once in the Bible, with 4,772 letters separating each letter of his name. The skip sequence is thus
4,772. The code reveals itself with the discovery that intersecting the name 'Yitzhak Rabin' is the
Hebrew phrase 'assassin will assassinate.'" *See Torah Soft*, 136 F. Supp.2d at 280 (citation omitted).

"DEF" and "XYZ" are methods of operation, they may be arranged in a unique way and that arrangement, itself, may be protected.

Here, Otis claims that eScholar's District_Key, way of capturing "slowly changing dimensions," and compilation of assessment data into one data structure are all unprotectable methods of operation.

Otis states that eScholar's District_Key is a method of operation by which information is loaded, queried, and retrieved from the database to create reports. eScholar states that the District_Key is the instruction to the computer and that, since Otis engaged in "literal copying" of that component by copying the data model, it should not be unprotectable as a method of operation. *Apple Computer, Inc.*, 714 F.2d at 1251.

The District_Key does not provide an interface for the user to run the program, unlike the menu command hierarchy in *Lotus*. *Lotus Dev. Corp.*, 49 F.3d at 814. It is, at least arguably, not the buttons on the VCR; rather, it is the instructions that tell the machine how to operate. *Cf. id.* at 818. District_Key may be more like the copyrightable screen displays in *Lotus* in that it does not determine how users control the program. *See id.* at 816. District_Key is not, in itself, an algorithm. *Torah Soft Ltd.*, 136 F. Supp.2d at 280, 282. While the Second Circuit does not appear to have decided the question, we believe that a method of operation may contain expression that it copyrightable. *Mitel, Inc.*, 124 F.3d at 1373. Even if we followed *Lotus*, however, and held that expression contained in a method of operation was not protectable, we would still find that this is not a case where District_Key is a method of operation as a matter of law.[16]

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[16] We note that District_Key is arguably an instruction rather than a method, and would, under *Mitel*, potentially warrant protection as a component of a grouping that, at a different level of abstraction would be an unprotectable method of operation. *Mitel, Inc.*, 124 F.3d at 1373. We need not make this decision, however, as we hold that District_Key is not, as a matter of law, a method of operation.

Otis states that eScholar's use of Student_Year within the student table to capture data that changes over time is merely a method of recording changes. eScholar states it created an original way of representing the concept of compiling and storing slowly changing dimensions. Again, we do not find that eScholar's use of slowly changing dimensions is, as a matter of law, a method of operation. *OP Solutions,* 1999 WL 47191 at * 16; *Apple Computer, Inc.*, 714 F.2d at 1251.

Otis states that eScholar's compilation of disparate assessment data in one table is a method of storing or compiling data in a database. eScholar contests this, referring to its table as "a structure and organization which represents all assessments ...." eScholar's Mem. Law Opp. Otis' [sic] Mot. Summ. J. 7. We do not find that eScholar's aggregation of data into a single data structure is, as a matter of law, a method of operation. *Apple Computer, Inc.*, 714 F.2d at 1251.

ii. Copyright Infringement

As we have not determined that eScholar's copyright is invalid as a matter of law, the next issue is whether Otis has infringed that copyright by copying literal or non-literal elements of eScholar's computer program. *See, e.g.*, *Altai*, 982 F.2d at 701.

"[T]he tests for copyright validity and copyright infringement are not the same." *See, e.g.*, *Durham Industries, Inc. v. Tomy Corp.*, 630 F.2d 905, 912 (2d Cir. 1980) (citing *Puddu v. Buonamici Statuary, Inc.*, 450 F.2d 401, 402 (2d Cir. 1971)). To show infringement, then, the plaintiff must then show that the defendant has actually copied her protected work, *see, e.g.*, *Altai*, 982 F.2d at 701, and that the copying is an "improper or unlawful appropriation." *Laureyssens*, 964 F.2d at 139-40. The plaintiff may show actual copying "either by direct evidence of copying or by indirect evidence, including access to the copyrighted work,

similarities that are probative of copying between the works, and expert testimony." *Id.* at 140.[17]

Whether the defendant actually copied the plaintiff's work is a question of fact. *See Gates*

Rubber, 9 F.3d at 832; *Arnstein v. Porter*, 154 F.2d 464, 469 (2d Cir. 1946).

"Access means that an alleged infringer had a 'reasonable possibility'—not simply a

'bare possibility'—of hearing [or seeing] the prior work; access cannot be based on mere

'speculation or conjecture.'" *Jorgensen v. Epic/Sony Records,* 351 F.3d 46, 51 (2d Cir. 2003);

see also Silberstein v. Fox Entm't Group, Inc., 02 Civ. 1131, 2004 WL 1620895 at *5 (S.D.N.Y.

Jul. 19, 2004).

As actual copying is a factual determination, it is improper to grant summary judgment

where the works were sufficiently alike that a reasonable juror could "properly infer that the

similarities did not result from coincidence." *Arnstein*, 154 F.2d at 469. Thus, a district court's

grant of summary judgment as to the issue of actual copying was improper where the appellate

court found "similarities" between the plaintiff's and defendant's musical compositions. *Id.*

Otis asserts there is no direct evidence of copying, and that eScholar cannot prove that the

works were similar.[18] Otis also argues that any similarities between the two models are as a

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[17] Some courts refer to this as a "substantial similarity" comparison. "'[P]robative,' rather than 'substantial' similarity is the correct term in referring to the plaintiff's initial burden of proving actual copying by indirect evidence," however. *Castle Rock Entm't, Inc. v. Carol Publ'g Group, Inc.,* 150 F.3d at 137. It is important keep clear the distinction between this step, which determines if the two works are alike enough to suggest that the defendant actually copied the plaintiff's work, and the next one, which determines if the copying is "quantitatively and qualitatively sufficient to support the legal conclusion that infringement (actionable copying) has occurred." *Ringgold v. Black Entertainment Television, Inc.*, 126 F.3d 70, 75 (2d Cir. 1997). (If there is insufficient evidence that the defendant actually copied the plaintiffs work, of course, the comparison step is unnecessary.) Thus, the better approach is to label the comparison to determine if there was copying as the "probative similarity" inquiry and the comparison to determine if that copying amounted to an unlawful or improper appropriation as the "substantial similarity." *See id.*; Alan Latman, *"Probative Similarity" as Proof of Copying: Toward Dispelling Some Myths in Copyright Infringement,* 90 Colum. L. Rev. 1187, 1204 (1990).

[18] Otis originally asserted that eScholar could not prove that Otis had access to eScholar's data models and that AssessMart was an "independent creation." *See Proctor & Gamble Co. v. Colgate-Palmolive Co.*, 199 F.3d 74, 77 (2d Cir. 1999). Otis later withdrew these arguments. (Def., Otis Ed. Sys., Inc.'s, Reply Mem, Law Further Supp. Summ. Final J. 12 n.34.)

result of the limited choices available, given the constraints of dimensional data modeling and the reporting requirements in the K-12 industry.

eScholar states that it gave Otis its data models and source code when the two parties were involved in a collective venture. eScholar points to similarities between the two programs and eScholar has offered sufficient evidence of access to survive summary judgment: it is undisputed that Otis had a copy of eScholar's computer program, data model, and other material in early 2000 and brought AssessMart to market sometime after reviewing that model. *See Jorgensen*, 351 F.3d at 51. Thus, actual copying is a disputed question of material fact and cannot be disposed of at the summary judgment stage. For the purpose of this summary judgment motion, eScholar has proffered sufficient facts that, if true, could lead a reasonable trier of fact to conclude that Otis actually copied its program, and move on to the next step of the infringement analysis.

Once the plaintiff has shown that the defendant actually copied her work, she must then "demonstrate that the copying was improper or unlawful by showing that the second work bears 'substantial similarity' to protected expression in the earlier work." *Castle Rock Entm't, Inc. v. Carol Publ'g Group, Inc.*, 150 F.3d 132, 137 (2d Cir. 1998) (citations omitted). "Substantial similarity" means that "the copying amounts to an improper or unlawful appropriation," i.e., (1) that the alleged infringer copied protected expression in the earlier work (2) that the amount that was copied was "more than de minimis." *Tufenkian Import/Export Ventures, Inc. v. Einstein Moomjy, Inc.*, 338 F.3d 127, 131 (2d Cir. 2003) (quoting *Castle Rock Entm't*, 150 F.3d at 137-38). This is a mixed question of fact and law. *See Gates Rubber*, 9 F.3d at 832. This is a mixed question of law and fact:

A variation of the "substantial similarity" test is often used in the computer program context. Thus, to determine if elements of two programs are substantially similar to each other, we must first determine the appropriate test to apply, as the courts have not been unanimous in their approach to copyright infringement of literal elements of computer programs. Two circuits have used the *Altai* Abstraction-Filtration-Comparison, explained below, to analyze both non-literal and literal copying of computer programs. *See Bateman v. Mnemonics, Inc.,* 79 F.3d 1532, 1545 (11th Cir. 1996); *Gates Rubber Co. v. Bando Chemical Industries, Ltd.,* 9 F.3d 823, 842-45 (10th Cir. 1993) (endorsing *Altai*'s test as a way of determining whether "menus and sorting criteria" are copyrightable); *see also Tradescape.com v. Shivaram*, 77 F. Supp.2d 408, 417 (S.D.N.Y. 1999) (finding "persuasive" the *Bateman* and *Gates* courts' rationales and applying *Altai* to both literal and non-literal copying).

The First Circuit, however, held that *Altai* applied only to non-literal copying and asked, instead, if there was a valid copyright and unauthorized copying by the defendant.[19] *See Lotus Dev. Corp. v. Borland Int'l, Inc.,* 49 F.3d 807, 815 (1st Cir. 1995). The Fifth Circuit recently noted that it had yet addressed whether *Altai* "should be used to evaluate charges that a program's source or object code was copied," but found that the case before it could be disposed of without deciding *Altai's* applicability to literal copying. *General Universal Sys., Inc. v. Lee*, 379 F.3d 131, 143(5th Cir. 2004); *see also Computer Associates Int'l v. Quest Software, Inc.*, 333 F. Supp.2d 688, 694 (N.D. Ill. 2004) (stating that the *Altai* test is used to prove "non-literal copyright infringement).

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[19] The *Lotus* court believed that using *Altai* to assess whether a defendant engaged in the literal copying of a certain type of menu code "obscures the more fundamental question of whether a menu command hierarchy can be copyrighted at all" by presuming that it could be. *Id.* at 815.

On its face, *Altai* applies only to non-literal elements of a program. As the *Altai* court

states, the test is used "to determine whether the *non-literal elements* of two or more computer

programs are substantially similar." *Altai*, 982 F.3d at 706 (emphasis added). The Second

Circuit noted in 1997 that "*Altai* articulated the proper copyright analysis to be applied to

evidence properly adduced in cases involving allegations of non-literal similarity in computer

programs." *Softel, Inc.*, 118 F.3d at 965 n.9. That same court later commented that "[o]ur

statements in *Altai* referring to the court's role in analyzing non-literal infringement claims . . .

should be taken only as statements as to what the court should do to analyze evidence properly

brought before it by a party." *Id*.

Functionally, however, we must apply the same "well developed doctrines of copyright

law" at *Altai*'s filtration stage to determine if each component contains copyrightable material

that the defendant may have infringed. *Altai*, 982 F.2d at 707. Thus, we will consider the

doctrines of copyright law articulated in the filtration step, explained in more detail below, for

literal and non-literal program components eScholar alleges that Otis copied.[20]

1. The *Altai* Test

In this circuit, courts apply the "Abstraction-Filtration-Comparison" test set forth in *Altai*

to determine if one computer program's non-literal elements are substantially similar to

another's. *See Altai*, 982 F.2d 693; *cf Lotus Dev. Corp. v. Borland Int'l*, 49 F.3d 807, 815 (1st

Cir. 1995) (noting that *Altai* provides a "useful framework for assessing the alleged nonliteral

copying of computer code" but declining to use it to determine whether the defendant infringed

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[20] Furthermore, the fact that courts have "abstracted" programs by parsing out elements ranging from the programs' source code to their overall purpose, then applied the filtration test to each of the abstracted components suggests that, despite the *Altai* court's insistence that it crafted a test specifically for "non-literal" elements, the filtration analysis would be applied to literal elements of the code.

the plaintiff's copyright by copying literal elements of the plaintiff's program), *aff'd without*

opinion by an evenly divided Court, 516 U.S. 233, 116 S.Ct. 804, 133 L.Ed.2d 610 (1996).

The *Altai* test "define[s] the scope of the plaintiff's copyright" by separating the elements

of the program that are copyrightable from the non-protectable elements. *Id.* at 707 (quoting

Brown Bag Software v. Symantec Corp., 960 F.2d 1465, 1475 (9th Cir.) (endorsing "analytic

dissection" of computer programs to isolate protectable expression), *cert. denied sub nom.*, *BB*

Asset Mgmt., Inc. v. Symantec Corp., 506 U.S. 869, 113 S.Ct. 198, 121 L.Ed.2d 141 (1992).

a. Abstraction

The abstraction step is used to separate idea from expression, and requires the court to

"dissect the allegedly copied program's structure and isolate each level of abstraction contained

within it." *Altai*, 982 F.2d at 707. The court starts with the concrete program code and ends with

a description of the ultimate, "abstract" function of the program. *Id.*[21] As the copyright holder

must ultimately establish infringement, however, in cases where "the copyright holder presents

the court with a list of features that it believes to be protectable (i.e., original and outside of 17

U.S.C. § 102(b)), the court need not abstract further such features." *O.P. Solutions, Inc.*, 1999

WL 47191 at * 7 (quoting *MiTek Holdings Inc. v. Arce Eng'g Co., Inc.*, 89 F.3d 1548, 1555

(11th Cir. 1996)). Thus, a court applying *Altai* need only "analyze evidence properly brought

before it by a party." *Softel Inc.*, 118 F.3d at 969 n.9 (citing *Mitek* with approval).

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[21] The *Harbor Software* court followed the Tenth Circuit by abstracting the program into sixth levels: "(i) the main purpose, (ii) the program structure or architecture, (iii) modules, (iv) algorithms and data structures, (v) source code, and (vi) object code." *Harbor Software, Inc. v. Applied Systems, Inc.*, 925 F. Supp. 1042, 1046 (S.D.N.Y.,1996) (quoting *Gates Rubber Co. v. Bando Chem. Indus., Inc.,* 9 F.3d 823, 835 (10th Cir. 1993)). There, the judge compared the policies underlying copyright and patent law and held that the filtration analysis was a matter of law for the Court to decide, not a question of fact. *Id*.

Here, Otis has identified the elements of its program that it believes were infringed.

Thus, we need not engage in the abstraction analysis. *See, e.g.*, *id.*

b. Filtration

The filtration step requires the court to examine the material gleaned from the abstraction

test to determine if it is protectable. *See, e.g.*, *Altai*, 982 F.2d at 707; *O.P. Solutions*, 1999 WL

47191 at * 7-8. Here, the court must examine the abstracted materials "at each level of

abstraction to determine whether their particular inclusion at that level was 'idea' or was dictated

by considerations of efficiency, so as to be necessarily incidental to that idea; required by factors

external to the program itself; or taken from the public domain and hence is nonprotectable

expression." *Altai*, 982 F.2d at 707. "Each case requires its own fact specific investigation." *Id.*

This step uses filters to determine which materials are not protectable under copyright

law.[22] Works can only merit protection if they are original, as discussed above; furthermore, the

common law copyright doctrines of "merger," "*scenes a faire*," and the public domain exception

filter out unprotected works. *See, e.g.*, *O.P. Solutions*, 1999 WL 47191 at * 22. Otis alleges

only that merger and *scenes a faire* bar eScholar's claims; thus, only these two doctrines will be

analyzed.

i. Merger

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[22] The application of these filtering mechanisms is similar to the original "copyrightability" analysis, but applied at the level of each component that the plaintiff alleges has been infringed. For instance, a work that is not original cannot be protected by copyright. A work that is a compilation of non-original components may be copyrightable, however, if the author employed creative or original selection criteria. Thus, a compilation of poetry may be protected "if the selection process imbues a compilation with the requisite creative spark" even though the person compiling the poems does not have a copyright over the individual poems. *Silverstein.,* 368 F.3d at 83. But even though this *collection* of poetry is protected, this protection does not prevent someone else from copying an individual poem.

Merger occurs"[w]hen there is essentially only one way to express an idea[; here,] the idea and its expression are inseparable and copyright is no bar to copying that expression." *Concrete Mach'y Co. v. Classic Lawn Ornaments, Inc.*, 843 F.2d 600, 606 (1st Cir. 1988), cited by *Altai*, 982 F.2d at 707-08. The expression of an idea is unprotected if that "expression is essential to the statement of the idea." *CCC Info. Servs. v. MacClean Hunter Mkt. Reports*, 44 F.3d 61, 68 (2d Cir. 1994), *cert. denied*, 516 U.S. 817, 116 S.Ct. 72, 133 L.Ed.2d 32 (1995). Expert testimony may be required to determine if any elements are necessary to the function of the works in question, and thus unprotectable. *Kohus v. Mariol*, 328 F.3d 848, 856 (6th Cir. 2003). If elements are found "sufficiently creative to be original," challenges based on merger are generally unsuccessful. *MyWebGrocer, LLC*, 375 F.3d at 194.

Congress noted that merger applies to computer programs:

Copyrighted language may be copied without infringing when there is but a limited number of ways to express a given idea. . . . In the computer context, this means that when specific instructions, even though previously copyrighted, are the only and essential means of accomplishing a given task, their later use by another will not amount to infringement.

National Commission on New Technological Uses of Copyrighted Works, *Final Report* 20 (1979).

To determine whether the merger doctrine prevents portions of a computer program from being protected, courts must determine if "'the use of *this particular set* of modules is necessary efficiently to implement that part of the program's process' being implemented." *Altai*, 982 F.2d at 708 (citations omitted). If so, "then the expression represented by the programmer's choice of a specific module or group of modules has merged with their underlying idea and is

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unprotected." *Id*. Thus, we must consider if an idea is capable of various modes of expression.

See Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240, 1253 (3d Cir. 1983). If

other programs can be written to perform the same function, then the program is "expression of

the idea and hence copyrightable." *Id.* But the question is not whether there are *any* possible

ways to write the program; instead, we ask whether other options practically exist under the

circumstances. *See Lexmark Intern., Inc. v. Static Control Components, Inc*., 387 F.3d 522, 536

(6th Cir. 2004). Thus, for a computer program to warrant copyright protection, the alternative

formulations "must be feasible within real-world constraints." *Id.*

Here, Otis claims that eScholar's data warehouse design and data models are governed by

the business, legal, and professional reporting requirements for the K-12 industry. Thus, the

argument goes, the words the data models contain and the arrangement of the fields in the model

and database, coupled with the limitations of dimensional modeling techniques, mean that an

"expression" of eScholar's ideas have merged with those underlying ideas. eScholar points to

several other computer programs that have many of the same purposes as eScholar and

AssessMart but differ at the code level and in their overall organization.

We hold that any protected expression has not, under the facts before us now, merged

with the underlying ideas in the programs. *Altai*, 982 F.2d at 708; *Kohus*, 328 F.3d at 856.

Other programs accomplish many of the same ends without using the elements that eScholar

alleges Otis copied; thus, the ideas are capable of other means of expression. *See Lexmark*

Intern., Inc., 387 F.3d at 536; *Apple Computer, Inc.*, 714 F.2d at 1253.

ii. *Scenes a Faire*

If an expression is "indispensable, or at least standard, in the treatment of" the underlying

idea, it is not protectable under the *scenes a faire* doctrine. *Altai, Inc.*, 982 F.2d at 709 (internal

quotations and citations omitted). The *scenes a faire* doctrine states that there is no copyright

protection for expressions that are "standard, stock, or common to a topic, or if they necessarily

follow from a common theme or setting." *See, e.g.*, *Mitel, Inc. v. Iqtel, Inc.*, 124 F.3d 1366, 1374

(10th Cir. 1997). Computer programmers often must employ standard techniques to write a

program that performs certain functions, and thus the *scenes a faire* doctrine often applies in the

computer programming context. *See Altai*, 982 F.2d at 709 (citation omitted). If elements are

found "sufficiently creative to be original," however, challenges based on *scenes a faire* are

generally unsuccessful. *MyWebGrocer, LLC*, 375 F.3d at 194.

Extrinsic considerations may circumscribe the programmer's freedom of design choice.

These considerations include:

> (1) the mechanical specifications of the computer on which a particular program is
>
> intended to run; (2) compatibility requirements of other programs with which a program
>
> is designed to operate in conjunction; (3) computer manufacturers' design standards; (4)
>
> demands of the industry being serviced; and (5) widely accepted programming practices
>
> within the computer industry.

Altai, 982 F.2d at 709-10 (citations omitted).

If "the same modules would be an inherent part of any . . . program," they are not

protected. *Q-Co Industries, Inc. v. Hoffman*, 625 F. Supp. 608, 616 (S.D.N.Y. 1985). In *Q-Co*

Industries, the district court denied copyright protection to four program modules employed in a

teleprompter program because there was "no testimony establishing any unique expression based

on the existence" of those modules. *Id.* at 616.

Otis states that the data models and the DDL are influenced by the dimensional modeling

techniques and standards, state and federal regulations, school district and states business

practices, and use of authoring programs like ERwin and PowerDesigner. Otis claims that the

fields and coordination and arrangement of the elements in the data model and DDL are dictated

by those factors and thus unprotectable under *scenes a faire*. eScholar states that the data models

are original works and that there is an issue of contested facts concerning the different options in

creating a data model for the K-12 industry.

Here, the data models are, at least arguably, original works. This alone does not protect

them from the *scenes a faire* doctrine, however. *See Q-Co Industries, Inc.*, 625 F. Supp. at 616.

Even original works may be controlled by external considerations. *See id.* Nevertheless, there

are issues of contested fact regarding the extrinsic considerations that guide or govern

programmers in the K-12 industry. Otis has not shown us that these specific modules "would be

an inherent part of any ... program." *Id.* Nor has it engaged in a detailed analysis of the factors

Altai set forth as circumscribing the programmer's freedom of design. *Altai*, 982 F.2d at 709-10.

While eScholar's data warehouse is based on the industry standards, its implementation of the

industry's requirements may nonetheless be original. *See MyWebGrocer*, 375 F.3d at 194.

Thus, the *scenes a faire* doctrine does not disqualify the data models from copyrightability.

c. Comparison

After the non-protected elements of the original computer program have been filtered out,

then the original and subsequent programs are compared. *See Altai,* 982 F.2 at 711. As the *Altai*

court explained, now "the court's substantial similarity inquiry focuses on whether the defendant

copied any aspect of this protected expression, as well as an assessment of the copied portion's

relative importance with respect to the plaintiff's overall program." *Id.*; *see also Harbor*

Software, Inc., 925 F. Supp. at 1048. Expert testimony may be required "to educate the trier of

fact in those elements for which the specialist will look to determine if two works are

substantially similar." *Kohus*, 328 F.3d at 857. As this comparison is similar to the "substantial similarity" step generally used for copyright infringement, we will also examine cases that did not apply *Altai*, but considered whether summary judgment should be granted at the substantial similarity step.

"Because substantial similarity is customarily an extremely close question of fact, summary judgment has traditionally been frowned upon in copyright litigation." *Hoehling v. Universal City Studios, Inc.,* 618 F.2d 972, 977 (2d Cir.1980); *Torah Soft Ltd.*, 136 F. Supp.2d at 282 (holding that whether works are substantially similar "often raises questions of fact not appropriately resolved on a motion for summary judgment"). Whether one work infringes another "is generally resolved by the fact-finder's prediction of the probable reaction of a hypothetical 'ordinary observer.'" *Durham Industries, Inc. v. Tomy Corp.*, 630 F.2d 905, 911 (2d Cir. 1980) (citing *Novelty Textile Mills, Inc. v. Joan Fabrics Corp.*, 558 F.2d 1090 (2d Cir. 1977)).

Substantial similarity is a question of fact even in the computer program context. Judge Preska reviewed the screen displays and data tables for the plaintiff's and defendant's computer programs and concluded reasonable jurors could come to different conclusions regarding whether the "user interface, the action grid, the data compilations and data tables" differed by more than a trivial degree. *O.P. Solutions, Inc. v. Intellectual Prop. Network, Ltd.*, 1999 U.S. Dist. LEXIS 979 (S.D.N.Y. 1999); *accord Lone Wolf McQuade Assocs.*, 961 F. Supp. at 594 (refusing to grant summary judgment on "substantial similarity" comparison of characters in television programs); *M.H. Segan Ltd. Partnership v. Hasbro, Inc.*, 924 F. Supp. 512, 521 (S.D.N.Y. 1996). The court left for the jury to determine "(1) whether the protectable elements of the two programs differ in more than a trivial degree and, (2) if not, whether those elements

are of sufficient import to the works as a whole to render the defendant guilty of infringement."

Id.

However, noninfringement may be decided as a matter of law "either when the similarity concerns only noncopyrightable elements of plaintiff's work, or when no reasonable trier of fact could find the works substantially similar." *Walker v. Time Life Films, Inc.*, 784 F.2d 44, 48 (2d Cir.), *cert. denied*, 476 U.S. 1159, 106 S.Ct. 2278, 90 L.Ed.2d 721 (1986); *see also O.P. Solutions, Inc. v. Intellectual Prop. Network, Ltd.*, 1999 U.S. Dist. LEXIS 979, *63, No. 96 Civ. 7952, 1999 WL 47191, at *5 (S.D.N.Y. Feb. 2, 1999); *Durham Industries, Inc.*, 630 F.2d at 915. Thus, a court may grant summary judgment for a defendant where the alleged similarity related only to non-copyrightable elements of the plaintiff's work. *See Hoehling*, 618 F.2d at 977. For a summary judgment to be proper, the lack of substantial similarity between the protectible aspects of the works must be "so clear as to fall outside the range of disputed fact questions" requiring resolution at trial. *Warner Brothers v. American Broadcasting Co.,* 720 F.2d 231, 239 (2d Cir. 1983).

A court can decide as a matter of law that no infringement occurred because any copying was de minimis. *Sandoval v. New Line Cinema Corp.*, 147 F.3d 215, 217-18 (2d Cir. 1998). Thus, in *Sandoval*, the court found that a defendant's film showed the plaintiff's photographs in poor lighting and at a great distance; as the plaintiff's images were not distinguishable, any infringement was de minimis as a matter of law. *Id.* The Second Circuit found that HBO engaged in more than de minimis copying when it filmed a poster of the plaintiff's copyrighted work on the set of a situation comedy, however, even though the painting, which was not the focus of the show, was shown in nine clips totaling less than thirty seconds. *See Ringgold*, 126 F.3d at 77.

Here, Otis claims that there are differences between the fields, tables, and organization of the eScholar and Otis programs. eScholar states that the issue of substantial similarity is a question of fact not ripe for judgment at this stage.

We do not find that it is undisputed any copying was de minimus. *See Sandoval*, 147 F.3d at 217-18; *Ringgold*, 126 F.3d at 77. Nor do we find that the similarity concerns only noncopyrightable elements of eScholar's work, or that no reasonable trier of fact could determine that the works are substantially similar. *See Walker*, 784 F.2d at 48. These are the only circumstances where courts have required summary judgment at the substantial similarity stage.
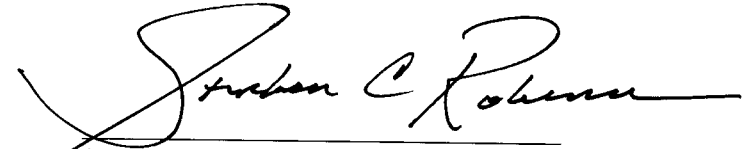
As "summary judgment has traditionally been frowned upon in copyright litigation," *Hoehling*, 618 F.2d at 977, because the question of whether the second work is substantially similar to the first "often raises questions of fact," we decline to grant summary judgment on the grounds that Otis's works are not substantially similar to eScholar's. *Torah Soft Ltd.*, 136 F. Supp.2d at 282. Having determined that a reasonable jury may find the works substantially similar, we need not engage in further analysis to determine if the works were, in fact, substantially similar.

III.   Conclusion

For the reasons stated above, Defendant Otis's motions for summary judgment are DENIED.

It is so ordered.

Dated: White Plains, New York
        November 3, 2005

Stephen C. Robinson, U.S.D.J.